

MR2707-3

Serial Number: 09/990,273

Reply to Office Action dated 3 November 2005

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listing of claims in the application:

LISTING OF CLAIMS:

Claim 1 (Currently amended) An ultrasonic and infrared transmitter with tunable carrier frequency comprising:

- a frequency divider for receiving an oscillation frequency and dividing said frequency to produce a carrier signal at an output thereof;
- a multiplexer having a first input for receiving a data signal and a second input coupled to said output of said frequency divider for receiving said carrier signal, said multiplexer having an output and a control input for receiving a select control signal to select between said data signal being output to said output of said multiplexer and said carrier signal ~~modulated by said data signal~~ being output to said output of said multiplexer;
- an output buffer connected to said output of said multiplexer for outputting a respective signal input thereto; and
- an infrared light emitting diode or an ultrasonic transducer connected to said output buffer for transmitting an infrared or ultrasonic ~~modulated~~ carrier signal.

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Claims 2 - 6 (Cancelled).

Claim 7 (Currently amended) An integrated circuit ultrasonic and infrared transmitter with tunable carrier frequency comprising:

a frequency divider for receiving an oscillation frequency and dividing said frequency to produce a carrier signal at an output thereof;

a pair of multiplexers, a first of said multiplexers having a first output, a first input for receiving a first data signal, a second input coupled to said output of said frequency divider for receiving said carrier signal and a first control input for receiving a first select control signal, a second of said multiplexers having a second output, a third input for receiving a second data signal, a fourth input coupled to said output of said frequency divider through an inverter for receiving an inverse of said carrier signal and a second control input for receiving a second select control signal, said first multiplexer outputting one of said first data signal and said carrier signal ~~modulated by said first data signal~~ to said first output responsive to said first select control signal, said second multiplexer outputting one of said second data signal and said inverse carrier signal

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~~modulated by said second data signal~~ to said second output
responsive to said second select control signal;
a pair of output buffers having inputs respectively connected to said first and
second outputs of said pair of multiplexers for providing a push-
pull output between respective outputs of said output buffers; and,
a transmitting element coupled between said outputs of said output buffers.

Claims 8 - 11 (Cancelled).

Claim 12 (Previously presented) An integrated circuit ultrasonic and infrared
transmitter according to claim 7, wherein said transmitting element is one of an
ultrasonic transducer or an infrared light emitting diode.